

KANSAS CITYS
EXHIBIT #4: LEVEE UNITS EXISTING CONDITION OVERTOPPING PERFORMANCE
5/26/2006

Unit	Existing Top of Levee Elevation* (ft msl)	Overtopping Expected Annual Exceedance Probability**	EXISTING CONDITION UNIT PERFORMANCE AGAINST OVERTOPPING				Differences between the design and existing levels of performance and the underlying causes, including degradation and related problems	EXISTING CONDITION POTENTIAL FAILURE SITES/MODES				Consequences of potential Structural and Geotechnical Failures
			1% EVENT		0.2% EVENT			Potential Structural and Geotechnical Failure Sites/Modes	Probability of Geotech/Struc Failure at TOL (overtopping point)	PFP (elev, ft msl)	PNP (elev, ft msl)	
			Nominal Water Surface Profile elevation at index point (ft.m.s.l.)	Margin (TOL elev minus 1% event elev)	Nominal Water Surface Profile elevation at index point (ft.m.s.l.)	Margin (TOL elev minus 0.2% event elev)						
ARGENTINE	776.0	0.002	769.61	6.4	778.24	-2.2	Changed channel geometry, slope, roughness	Arg Levee Embankment	0.317	776.0 (TOL)	775.2	Unit will flood.
							Different calibration event ('93 vs '51) Different flood hydrograph due to reservoir control	Arg Floodwall	0.006	776.0 (TOL)	776.0 (TOL)	Unit will flood.
								Strong Ave Pump Station	0.919	775.2	767.6	Unit will flood.
								Argentine Pump Station	0.953	774.8	767.3	Unit will flood.
FAIRFAX-JERSEY CR	760.5	0.000***	751.53	9.0	757.61	2.9	JC Sheetpile Wall: bed degradation, scouring during 1993 event; deterioration, end of design life	JC Sheetpile Wall	0.400	760.5 (TOL)	751.7	Unit will flood.
							BPU floodwall: insufficient pile strength (bending capacity)	BPU Floodwall	0.961	760.1	758.6	Unit will flood.
								Lower tieback Floodfight	0.329	760.5 (TOL)	759.5	Unit will flood.
								JC Outlet Floodfight	0.086	760.5 (TOL)	760.5 (TOL)	Unit will flood.
NORTH KANSAS CITY UNIT	755.5	0.001	748.81	6.7	754.45	1.0	Geotechnical underseepage problems identified during 1993 flood event	Harlem Underseepage Site	0.423	755.5 (TOL)	750.7	Unit will flood.
								National Starch Underseepage Site	0.351	755.5 (TOL)	752.4	Unit will flood.
EAST BOTTOMS UNIT	746.3	0.000	738.26	8.0	742.63	3.7	Geotechnical underseepage problems identified during 1993 flood event	Missouri/Blue Confluence Underseepage Site	0.197	746.3 (TOL)	744.3	Unit will flood.
								Floodwall Sta 64+48 to 74+56	0.044	746.3 (TOL)	746.3 (TOL)	Unit will flood.

NOTES:
* TOL elevation represents the low spot on the levee translated to the index point of the Unit.
** Based on Monte Carlo analyses of hydrologic and hydraulic uncertainties.
***Overtopping Reliability shown for Fairfax-Jersey Creek Unit assumes a successful flood fight at lower tieback and JC outlet